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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SING, SIMON P

ART UNIT PAPER NUMBER

2614

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/777,322	PASCOVICI, ANDREI	
	Examiner	Art Unit	
	Simon Sing	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 11, 13, 23, 25, 32, 34 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: person(s) who is doing a manual review or inspection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 6-9, 14, 15, 18-21, 26, 27, 29, 30, 35 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Almeida EP 0942575.

- 2.1 Regarding claim 1, Almeida discloses a system and method or identifying a caller. Almeida teaches:

receiving a voice input from the caller (figure 4, steps 301 and 302);

identifying a caller by voice recognition with speaker dependent (previous identified caller) recognizer and speaker independent (generic) recognizer (Abstract); using a plurality of speech recognizers, i.e. a speaker dependent recognizer comprising a plurality of known caller voice patterns (acoustic models), and the speaker independent recognizer (also comprising a plurality of generic voice patterns) for identifying a caller's name (figure 4; steps 305-309; paragraphs 0056, 0093 and 0094);

identifying the caller as an previous identified caller or a new caller based on the match (score) of the speaker dependent recognizer and the speaker independent recognizer (paragraph 0093 and 0094); and

if the caller is identified as a new caller, generating a new speech sample (new model) for a new caller (paragraph 0094).

Almeida further teaches using the Hidden Markov Models (HMM) for speech recognition (paragraph 0053).

2.2 Regarding claim 2, Almeida teaches that if a caller is identified by a speaker independent recognizer, but not by the speaker dependent recognizers, then it is inherent that the speaker independent recognizer has a better match or score.

2.3 Regarding claim 3, as discussed in above, Almeida also teaches using HMM which segments a speech input into phonetic sequence (paragraph 0053).

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2.4 Regarding claims 6 and 7, Almeida teaches collecting a voice sample (pattern or model) of a new caller (figure 4, steps 308 and 309; paragraph 0094).

2.5 Regarding claim 8, Almeida teaches that the caller is not being alerted while performing speech recognition (figure 4, steps 302-309).

2.6 Regarding claim 9, as discussed in above, Almeida also teaches using HMM which segments a speech input into phonetic sequence (paragraph 0053).

2.7 Regarding claims 14 and 26, Almeida discloses a system or identifying a caller, comprising:

incoming voice recorder for receiving a voice input from the caller (figure 2, steps 301 and 302; paragraph 0066);

memories 120 and 125 for storing speaker dependent (previous identified caller) speech patterns (acoustic models) and speaker independent speech patterns (genetic models) (figure 2; paragraphs 0075 and 0082);

parameters analyzers 118 and 123 for applying characteristics of the voice input to the speech patterns to produce a plurality of scores (figure 4; steps paragraphs 0091-0094, 0056);

name identifiers 122 and 127 for identifying the caller as a previous identified caller or a new caller based on the match (score) of the speaker dependent recognizer and the speaker independent recognizer (paragraph 0093 and 0094); and

if the caller is identified as a new caller, using a speech pattern generator generating a new speech sample (new model) for a new caller (figure 4, step 309; paragraph 0094).

Almeida further teaches using the Hidden Markov Models (HMM) for speech recognition (paragraph 0053).

2.8 Regarding claims 15 and 27, Almeida also teaches using HMM which segments a voice input into phonetic sequence for speech recognition (paragraph 0053).

2.9 Regarding claims 18 and 29, as discussed above, Almeida teaches that if the caller is identified as a new caller, using a speech pattern generator generating a new speech sample (new model) for a new caller (figure 4, step 309; paragraph 0094).

2.10 Regarding claim 19, Almeida teaches a speaker dependent memory 120 for storing speaker dependent speech patterns and if the caller is identified as a new caller, using a speech pattern generator generating a new speech sample (new model) for a new caller (figure 4, step 309; paragraph 0094). The new speech sample (pattern) inherently is stored in the speaker dependent memory 120.

2.11 Regarding claim 20, Almeida teaches that the caller is not being alerted while performing speech recognition (figure 4, steps 302-309).

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2.12 Regarding claim 21, as discussed in above, Almeida also teaches using HMM which segments a speech input into phonetic sequence (paragraph 0053).

2.13 Regarding claim 30, Almeida teaches that the speaker independent memory 125 storing a plurality of generic patterns (models), and when a new caller's voice sample (pattern) is received, the new voice pattern is trained to be a speaker dependent speech pattern by a trainer (paragraph 0094).

2.14 Regarding claim 35, Almeida discloses a system and method of identifying a caller. Almeida teaches:

receiving a voice input from the caller (figure 4, steps 301 and 302);

identifying a caller by voice recognition with speaker dependent (previous identified caller) recognizer and speaker independent (generic) recognizer (Abstract);
using a plurality of speech recognizers, i.e. a speaker dependent recognizer comprising a plurality of known caller voice patterns (acoustic models), and the speaker independent recognizer (also comprising a plurality of generic voice patterns) for identifying a caller's name (figure 4; steps 305-309; paragraphs 0056, 0093 and 0094);

identifying the caller as an previous identified caller or a new caller based on the match (score) of the speaker dependent recognizer and the speaker independent recognizer (paragraph 0093 and 0094); and

if the caller is identified as a new caller, generating a new speech sample (new model) for a new caller (paragraph 0094).

Almeida further teaches using the Hidden Markov Models (HMM) for speech recognition (paragraph 0053). The HMM inherently segments the voice input into a sequence of phonetic units for speech recognition (see US 5,825, 977 issued to Morin et al. column 3, lines 36-46, and also US 5,649,056 issued to Nitta, column 4, lines 24-29).

2.15 Regarding claim 36, as discussed above, Almeida teaches that if the caller is identified as a new caller, generating a new speech sample (new model) for a new caller (figure 4, step 309; paragraph 0094).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4, 5, 16, 17 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Almeida EP 0942575 in view of Raman US 5,893,059.

3.1 Regarding claims 4, 16 and 28, Almeida teaches collecting a plurality of speech patterns (models) for each known caller (paragraph 0140) and collecting caller's voice

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samples for each call (figure 4, step 309), but fails to explicitly teach updating the speech patterns (models).

However, Raman teaches using newly obtained models for updating old models (column 6, lines 5-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Almeida's reference with the teaching of Raman so that speech patterns (acoustic models) would have been updated from time to time, because such a modification would have provided most updated models for a speech recognition system.

3.2 Regarding claims 5 and 17, Almeida teaches that a caller's name comprises a single utterance, such as Tom or Bob (paragraph 0121).

4. Claims 10, 22 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Almeida EP 0942575 in view of Maes US 6,088,669.

Almeida teaches maintaining caller specific voice patterns (acoustic models) in a memory 120, but fails to teach maintaining a caller specific language model for each of the previously identified callers.

However, Maes discloses a method for identifying a speaker, using speaker dependent and speaker independent models (column 5, line 61 to column 6, line 13). Maes further teaches using different models, such as HMM and special language

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models specific to previous identified speakers for speech recognition (column 4, lines 42-49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Almeida's reference with the teaching of Maes so that specific language models would have been maintained, because such a modification would have improved the accuracy of speech recognition as taught by Maes (see Maes, column 4, lines 49-52).

5. Claims 11, 23, 32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Almeida EP 0942575 in view of Chen US 2001/0029452.

Almeida teaches using speech recognition to identify a caller, but fails to teach manually inspecting any discrepancies in the speech recognition.

However, Chen discloses a method for voice recognition. Chen teaches that in marginal recognition, a manual inspection is provided (paragraphs 0078 and 0079).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Almeida's reference with the teaching of Chen so that a manual inspection would have been provided when marginal recognition (errors) was encountered, because such a modification would have increased the accuracy of speech recognition.

6. Claims 12, 24, 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Almeida EP 0942575 in view of Beigi et al. US 6,684,186.

Almeida teaches maintaining caller specific voice patterns (acoustic models) in a memory 120, but fails to teach merging voice patterns using a distance measurement.

However, Beigi discloses a speaker recognition system in that speech models with closest distance are merged (column 4, lines 1-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Almeida's reference with the teaching of Beigi so that speech patters with closest distance would have been merged, because such a modification would have saved memory space for not storing duplicated speech patterns.

7. Claims 13, 25 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Almeida EP 0942575 in view of Beigi et al. US 6,684,186 and further in view of Chen US 2001/0029452.

The modified Almeida reference teaches merging voice patterns, but fails to teach a manual inspection.

However, Chen discloses a method for voice recognition. Chen teaches a manual inspection when grouping (merging) similar words (paragraph 0079).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Almeida's reference with the teaching of Chen so that a manual inspection would have been provided when merging speech patterns, because such a modification would have provided a last moment checking to prevent an erroneous merging.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


a) Wohlsen et al. US 6,978,238 discloses a system and method for identifying a user by voice.

9. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Simon Sing whose telephone number is 571-272-7545. The examiner can normally be reached on Monday - Friday from 8:30 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang, can be reached at 571-272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.



S. Sing

04/10/2006



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